ONE-DAY HEARING

Application for revocation of Mining Facility Removal Licence for the Shea Creek Project

THE CHAIRPERSON: We will now proceed to the next hearing, which is a one day hearing on the matter of an application by COGEMA Resources Inc. for the revocation of its Mining Facility Removal Licence for the Shea Creek Project.

January 29th was the deadline set for filing by the applicant and by CNSC staff. The public was invited to participate either by oral presentation or written submission. January 29th was also the deadline set for filing by intervenors. Two requests for intervention were filed and one was accepted. A letter from Tamarick Developments Limited was refused as it was received after the deadline for interventions. The secretariat has informed Tamarick Developments Limited that their comments will not be added to the agenda for this hearing.

February 21st was the deadline for filing of supplementary information. The applicant has filed supplementary information CMD 02-H5.1A. We will start with the applicant's

presentation as noted in CMD Documents 02-H5.1 and 02-H5.1A. This is an oral presentation by COGEMA Resources and I will turn it over to COGEMA.

02-H5.1/02-H5.1A

Oral Presentation by COGEMA Resources Inc.

MR. POLLOCK: Good morning, Madam Chairman and members of the Commission.

For the transcript record, I am Robert Pollock, Vice President of Environment, Health and Safety of COGEMA Resources Inc. Also present today on behalf of COGEMA Resources is Mr. Jean-Claude Rippert, Vice President of Exploration.

We are here in support of our application to revoke the uranium mining facility removal licence for the Shea Creek Project. Shea Creek is a uranium exploration project located in the western area of the Athabasca Basin in northern Saskatchewan, about 25 kilometres to the south of the Cluff Lake project as shown in this slide.

We have provided a written submission as CMD 02-H5.1 and our oral presentation today will summarize this submission

and also provide some additional background information on mineral exploration and on the radiation protection requirements which exist at the provincial level for uranium exploration activities.

This slide outlines our presentation today. Following this introduction, we felt it may be useful to the Commission members for us to offer some brief comments on the general sequence of activities at an exploration project and how these relate to the overall project development steps. Mr. Rippert will do this and then describe where the Shea Creek Project fits in this sequence.

I will then provide our perspective on CNSC licensing requirements at removal sites and on the regulatory framework, which exists for protection of workers and the environment at exploration sites in Saskatchewan, independent of CNSC requirements.

We believe that this regulatory framework and our programs are unaffected by this application to revoke the existing AECB licence for the Shea Creek Project, and will continue to provide a high level of protection for workers and

the environment.

I will now turn the presentation over to Jean-Claude Rippert.

MR. RIPPERT: Thank you, Bob.

For the transcript record, I am Jean-Claude Rippert, Vice President of Exploration of COGEMA Resources. I will start with some general observations about exploration and where it fits in the sequence of main activities for mining project.

Exploration is triggered by the need to find and/or replenish reserves of a mineral commodity or metal, in our case, uranium. Exploration is a front runner. It does not necessarily mean successful development of a mine. Both exploration and mining are highly dependent on commodity price and production costs. Providing information to local communities is an important complementary activity, even at the exploration stage. It's needed both to support the exploration activities and in advance of the subsequent environmental assessment in the licensing processes required for project development.

There are three main steps to a

mining project: (a) exploration; (b) decision to develop; (c) construction, operation and decommissioning phases. I will briefly discuss each of the above.

Exploration can be thought of as a zoom-in exercise from large areas to small targets, with each phase depending on the results gained from the previous phase. The initial phase is to select large areas on the geological merits, for example, geologic models derived from known mineralization in other areas.

Next come regional surveys to confirm interest and potential. Typical activities are airborne surveys, long cross sections, samples gathering, geochemical assays and hunting for anomalies.

The work then moves to identifying and prospecting at anomalous areas. This is the start of detailed work and involves mapping, ground geophysics and drilling at relatively large spacings.

If warranted, drilling at a closer pattern is done to confirm that there is, or will be, room for economic mineralization. Continuity of results is a key factor since an occasional

good mineral intersection by a drill hole does not constitute an ore body.

If successful, the endpoint of this sequence of activities is identification of a potentially economic ore body, providing the justification for the major increase in exploration drilling and costs needed to delineate the ore body for a feasibility study.

This endpoint is shown by the dashed horizontal line in the slide. Although the subsequent delineation drilling will normally be done by the exploration team, it is important to recognize that this only occurs if a potential ore body has been identified, and it represents the first significant commitment towards development of a project.

Once a potential ore body has been discovered, the next major step is to refine the knowledge of the ore body and to determine if there is a viable project. A typical sequence for the phases in this step is as follows.

Additional drilling, often referred to as delineation drilling, is done at a pattern which leaves little or no doubt about the attitude of the mineralization and which will

allow a reliable reserve evaluation, that is, the quantity of metal contained in the ore body can be reliably estimated from the measurements.

At some ore bodies delineation of the reserve, or determination, of ground conditions for mining could require an underground test mine program.

A feasibility study is then done. This is a study which explores all the pros and cons for a viable project, including mining and milling assumptions and costs for economic viability, environmental and market considerations, current policies, et cetera, et cetera.

Based on the results from the feasibility study, a decision on whether to proceed further is made by the company, if a sole owner, or the joint venture partners.

The next phase is then usually an environmental assessment to meet federal and provincial or territorial requirements for such assessments, and which leads to decisions by the governments on the acceptability of the proposed project.

A development decision by the

owners to proceed towards construction and operation requires both that the proposed project be found acceptable through the environmental assessment process and that conditions for it to be economically feasible continue to exist or subsequently develop.

It may take 10 to 20 years or more between the initial discovery and the development decision.

Once the development decision is taken, the project proceeds to construction and operation and ultimately decommissioning phases.

CNSC licensing requirements for these phases are well known and not particularly relevant to today's hearing, so we will not further pursue them.

The question which is relevant to this hearing is at what point is a CNSC site preparation licence for a removal site required and I will shortly turn our presentation back to Mr. Pollock to provide our perspective.

Before doing so, I will comment briefly on the stage of exploration we have reached at Shea Creek.

This figure shows the Shea Creek

claims. The one at the lower right was allowed to lapse in 2001, leaving 12 claims with an area of just under 22,000 hectares.

Work started in 1990, and geophysics surveys led to the identification of a NNW trending graphitic conductor at a depth of about 700 metres at the sandstone/bedrock interface.

Drilling started in 1992 and has focused mostly on the two areas identified in this figure as the Anne and Colette areas.

This slide shows the drilling grid map. It is a very busy figure, so I will provide just the highlights.

Initial grids were widely spaced. By the of 1997, two zones or uranium mineralization were identified in the Anne and Colette areas.

Drilling in 1998 and 1999 was directed at reducing the grid spacing in these areas to 100 metre line spacing with limited areas reduced to 20 to 25 metre centres.

In 2000, additional drilling was performed between those two areas, but the results were not overly encouraging. We have assigned a

higher priority to exploration at other locations in the Athabasca Basin and performed no drilling at Shea Creek in 2001 and none is planned in 2002.

Work in 2003 and beyond is likely, at least to the extent necessary for us, to maintain selected claims in good standing.

In summary, in spite of the advanced phase of exploration drilling, we are still not at the stage of having identified a potentially viable ore body. That is, we have yet to reach the dashed line in my earlier slide on exploration phases.

In terms of the physical environment and impact of this project, this shows a typical drilling site. Mobilization and demobilization at Shea Creek is straightforward. It is close enough to the Cluff Mine Lake facility that the exploration staff are housed there and we use the core examination and the core storage facilities which have existed at the Cluff Lake Project for many years. The only current evidence of our activities to date at the Shea Creek are the trails cleared for access from the provincial road leading to Cluff Lake, and the small clearings at the drill sites.

I will now the turn the presentation back to Bob Pollock.

MR. POLLOCK: Thank you, Jean-Claude.

The requirement for a removal licence was triggered in 1999 when the amount of uranium contained in the drill cores for that year exceeded the 10 kilogram amount specified for a removal site in the Atomic Energy Control Board Uranium Mining and Thorium Regulations. This licence has no expiry date and was most recently issued in May of 2000. It has been in a ceased activity status since the end of the year 2000 field program.

The basis for the application to revoke this removal licence is that activities currently being carried out on this project, and for the foreseeable future are surface exploration activities which are exempt from the CNSC Uranium Mines and Mills Regulations, or UMMR, as per subsection 2(2) of these regulations.

The uranium contained in drill cores is then a naturally occurring nuclear substance, and such substances are exempt from CNSC regulations as per section 10 of the General

Nuclear Safety and Control Regulations, except for the provisions related to transport, and import or export of nuclear substances. Protection of worker health and safety, and protection of the environment will continue to be ensured through other existing regulatory requirements applicable to uranium exploration, and generally to mineral exploration, in Saskatchewan. These are unaffected by whether or not there is a CNSC licence for a removal site.

The removal site is now defined in section 1 of the UMMR as "a place at which uranium is removed from its place of natural deposit by means of surface activities for the purpose of evaluating a potential ore body."

It is our understanding that the intent, in adopting this wording, was to distinguish between surface exploration drilling, which would be exempt, and what could be referred to as delineation drilling for the purposes of evaluating a potential ore body. Delineation drilling would require a much tighter grid spacing, and major increase in expenditures, than previously used or currently planned at Shea Creek.

As noted earlier by Mr. Rippert, we have not yet reached the horizontal dashed line in his illustration of the sequence of exploration phases, and we see this line as the dividing point beyond which a CNSC site preparation licence for a removal site would be required.

In our written submission, we have also made reference to the definitions of indicated resource and measured resource put forward by Cameco, since we believe there should be clarity in defining when the CNSC licensing requirement is triggered at any uranium exploration project.

COGEMA Resources is not a publicly traded company, however the decision making processes used during project development are similar, and we believe that there is merit in adopting widely-used definitions such as these. We are prepared to participate in whatever further consultations with CNSC staff may be required to reach agreement on an appropriate definition.

We believe that all measures necessary for protection of workers, members of the public and the environment are in place for mineral exploration projects, including uranium

exploration projects, in Saskatchewan. These measures result from the regulatory framework which exists for exploration activities in Saskatchewan independently of CNSC regulatory requirements, and the programs used by COGEMA Resources for protection of health, safety and environment at any exploration project.

Provincial regulatory requirements are applicable to all mineral exploration activities in Saskatchewan, including uranium exploration projects such as Shea Creek.

Provincial requirements for environmental protection are discharged by the Department of Saskatchewan Environment and Resource Management or SERM. Mineral exploration and permitting are administered under The Mineral Industry Environmental Protection Regulations. Specific guidelines exist in the form of the Surface Exploration Guidelines for the Mineral Exploration Industry.

In addition to provincial environmental requirements, the federal Department of Fisheries and Oceans, DFO, has specific regulatory requirements related to stream crossings and protection of fish habitat. The DFO

regulatory presence has recently been substantially expanded and we are in the process of developing the administrative mechanisms to efficiently meet both provincial and DFO requirements, which have many similarities and areas of common interest.

Regulatory requirements for worker protection are discharged by the Department of Saskatchewan Labour, specifically by the Occupational Health and Safety Division through the Occupational Health and Safety Act of 1993 and regulations associated with it.

Radiation protection requirements for naturally occurring radioactive materials, or NORM as it's frequently called, arise from various circumstances and are applicable when considering the uranium content of drill cores at exploration sites. These are discussed in more detail in the next slide, since we believe that one of the questions which may arise from our application is whether the radiation protection aspects of uranium exploration remain adequately regulated.

Naturally occurring radioactive material, or NORM, is exempt from CNSC jurisdiction except for the import, export and

transport of the material. Jurisdiction over use of and radiation exposure from NORM thus rests with each Canadian province and territory.

As described in a recent publication, the Federal Provincial Territorial Radiation Protection Committee, or FPTRPC, is an intergovernmental committee established to support federal, provincial and territorial radiation protection agencies in carrying out their responsibilities. Industrial activities where these responsibilities are applicable include petroleum production, fertilizer manufacture and metal recycling.

A NORM working group of the FPTRPC has produced the Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials. The preface states that this was done "with the support and encouragement of Health Canada and the Canadian Nuclear Safety Commission."

The basic principle underlying the guidelines is that where workers or the public are exposed to additional sources or modes of radiation exposure because of activities involving NORM, the same radiation protection standards

should be applied as for CNSC regulated activities.

A review of the guidelines indicates consistency with the radiation dose limits established by the CNSC for workers and for members of the public and similar requirements to ensure minimal public and worker radiation doses through application of the ALARA principle.

The guidelines also incorporate the concept of a dose constraint, with references to ICRP and IAEA documents. A dose constraint is described as an upper value on the annual dose that members of the public or incidentally exposed workers should receive from a planned operation or a single source. The dose constraint allows for exposure from other sources without the annual limit of 1 millisievert being exceeded. The guidelines adopt an ICRP suggestion of 0.3 millisieverts per year for a dose constraint, by making this the first investigation level in their classification system.

It should be noted that although a number of industrial sectors are listed in the guidelines as potential sources of NORM exposure, uranium exploration was not explicitly identified.

However, the guidelines appear to be directly applicable, and we expect that our radiation protection procedures, which were designed to meet CNSC requirements, also meet these guidelines. We have not explicitly considered the dose constraint concept, but it appears to us that the CNSC ALARA requirements have lead to an equivalent outcome with respect to potential radiation doses to members of the public.

With respect to the legal authority for invoking these guidelines, which are not directly a regulation, we believe that this is provided through general provisions in the provincial Occupational Health and Safety Act. We also would have no objection to a condition being added in future to the exploration permits issued by SERM, which would make these guidelines mandatory for uranium exploration and assign the administrative responsibility to Saskatchewan Labour.

Environmental protection at Shea Creek, and other uranium exploration projects in northern Saskatchewan, has been mainly on a project specific basis until now through the SERM permitting process and through compliance on our

part with the conditions associated with the approvals.

In the case of Shea Creek, environmental protection is also a requirement of the CNSC licence, and DFO requirements also apply to some aspects of any exploration project. We are well advanced in developing an Environmental Management System, or EMS, for exploration, based on ISO 14001 requirements.

The target is ISO 14001 certification of the EMS for the Exploration Department by the end of this year, and we believe that this approach will both meet the needs of all regulatory agencies plus lead to efficient approval processes for individual exploration projects.

We have also developed detailed radiation protection procedures for the Shea Creek Project, and these will be used in future at any COGEMA Resources exploration project with cores where uranium mineralization is present.

These programs can be readily integrated into a generic Environment, Health and Safety manual for exploration, which will consistently address conventional safety

requirements, including emergency preparedness from an exploration perspective. This systematic approach is part of our overall corporate approach to a Quality Management System which provides assurance of protection of workers, members of the public and the environment throughout all phases of our projects and all activities within each phase.

To summarize our presentation, COGEMA Resources requests the revocation of Removal Licence AECB-MFRL-158-0.1, which has no expiry date, because the activities at the Shea Creek Project do not require a licence under the Canadian Nuclear Safety Act or its regulations.

Protection of worker health and safety, and protection of members of the public and of the environment will be ensured through other existing regulatory requirements applicable to uranium exploration at this project, and generally to mineral exploration in Saskatchewan.

The environmental protection and safety programs implemented by COGEMA Resources have been, and will continue to be, effective in achieving these outcomes.

We would be pleased to respond to

any questions which Commission members may wish to direct to us. Thank you.

THE CHAIRPERSON: Thank you very much.

With the permission of the Commission members, I would like to turn to the staff in order to commence with the staff presentation with regards to this application before we go to questions. With that I will turn over to Mr. Howden.

02-H5

Oral presentation by CNSC staff

MR. HOWDEN: Madam Chair, members of the Commission, for the record my name is Barclay Howden. I'm the Acting Director General of the Directorate of Nuclear Cycle and Facilities Regulation as well as the Director of the Uranium Facilities Division. With me today is Mr. Rick McCabe, Head of the Uranium Mines Section of the Uranium Facilities Division.

COGEMA Resources Inc. has applied for the revocation of their Mining Facility Removal Licence for the Shea Creek Project on the basis that the current activities being carried out on this project and for the foreseeable future

are strictly surface mineral exploration activities which are exempt from the Uranium Mines and Mills Regulations under the Nuclear Safety and Control Act.

CNSC staff has assessed the application and has developed a position which is documented in CMD 02-H5. I will now pass the presentation over to Mr. McCabe who will outline our assessment and recommendations.

MR. McCABE: Thank you. For the record, my name is Rick McCabe, Head of the Uranium Mines Section.

Madam Chair, members of the Commission, COGEMA Resources Inc. has applied to the Canadian Nuclear Safety Commission to have the Shea Creek Mining Facility Removal Licence revoked because the licence under the Nuclear Safety and Control Act is not required for the surface exploration activities currently being carried out on this project.

Exploration is the search for minerals using the geological surveys, geological prospecting, bore holes and trial pits or surface or underground headings, drifts or tunnels. Exploration aims at locating the presence of

mineral deposits and establish their nature, shape and grade. Surface exploration refers to those activities carried out on the surface primarily by collecting information from drill cores.

The Uranium Mines and Mills Regulations do not apply to uranium prospecting or surface exploration activities, therefore a CNSC licence is not required for surface exploration.

A project to discover and collect information about an ore body follows a progression that eventually leads to a decision to construct a mine. As the exploration project progresses, confidence is gained in the reliability of the resource description interpreted from the information gathered. Eventually the exploration company will have enough information to enable them to produce resource estimates. It is at this point that the company will begin to evaluate possible mining scenarios. This activity will trigger the requirement for a CNSC license.

The Nuclear Safety and Control Act and Uranium Mines and Mills Regulations do not define when exploration ends and evaluation begins. CNSC staff is examining ways to define

this point with certainty.

A CNSC mine site preparation licence will be required once enough information has been collected about a mineral deposit to support mine planning and evaluation of the economic viability of the deposit. Any work that involves underground development is considered to be for the purpose of evaluating a potential ore body, therefore a CNSC license is required for any underground activities. However, discussion for this licensing action only relates to surface activities.

The Shea Creek Project was licenced under the Atomic Energy Control Act and Uranium and Thorium Mining Regulations. Exploration activities were exempt from the provisions of the Uranium and Thorium Mining Regulations, however, a licence was required to remove more than 10 kilograms of uranium in a calendar year. The 10 kilogram provision was in conflict with the exemption of exploration activities because this limit can be easily exceeded during exploration.

The Atomic Energy Control Board while recognizing the conflict, implemented the

more restricted provision and required a licence for the Shea Creek Project even though the activities carried out were clearly exploration.

The Atomic Energy Control Act and the Uranium and Thorium Mining Regulations were replaced by the Nuclear Safety and Control Act and the regulations. Under the new legislation a licence is not required until the company's activities change from exploration to evaluation of a potential ore body. The ten kilogram requirement has been removed from the legislation because it was in conflict with the intent to exclude exploration from CNSC mandate.

In addition to the exclusion in Uranium Mines and Mills Regs, naturally occurring nuclear substances, other than those that are or have been associated with the development, production or use of nuclear energy are exempt from the provisions of the Nuclear Safety and Control Act and the regulations. This exemption applies to exploration projects because they are not, nor have they been, associated with the development, production or use of nuclear energy.

Uranium recovered during an exploration is a naturally occurring nuclear

substance even though the amount of uranium removed during exploration may exceed exemption quantities found in nuclear substances and radiation devices regulations, section 10 of the general Nuclear Safety and Control Regulations exempts it from the provisions of the Nuclear Safety and Control Act and the regulations made under the act.

CNSC staff is satisfied that the activities that have been undertaken at the Shea Creek Project to date are clearly associated with surface exploration. It is our assessment that according to Nuclear Safety and Control Act and the regulations made under the act, the surface explorations that are being carried out at the Shea Creek Project are not within our mandate. These activities fall under the jurisdiction of the Province of Saskatchewan.

Surface mineral exploration activities in Saskatchewan are overseen by Saskatchewan Environment and Resource Management on behalf of several provincial departments. The Saskatchewan Environment and Resource Management document "Surface Exploration Guidelines for the Mining Industry," provides guidance on how a

mineral exploration program should be planned, implemented and completed in a manner that minimizes environmental impacts and meets Saskatchewan's legislation.

The surface exploration permit issued by SERM make it a condition for exploration activities, site access work camps, land clearing, drilling and reclamation of disturbed sites.

Saskatchewan's Occupational Health and Safety Act and Regulations apply to exploration activities. They are administered by the Saskatchewan Department of Labour. There are a number of provisions in the act that allow for the application of the Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials published by Health Canada in the event that the safety of workers is found to be at risk.

The basic principle of these guidelines is that the same protection should be applied to workers or the public exposed to radiation from activities involving naturally occurring nuclear substances as is applied to workers or the public exposed to radiation from CNSC regulated activities.

The Atomic Energy Control Board

required the posting of a financial guarantee to fund the decommissioning of the Shea Creek Project. COGEMA has provided an irrevocable letter of credit for $24,000 for this purpose. Saskatchewan has indicated that this financial guarantee will no longer be required. Instead, SERM uses permits to ensure the clean-up and decommissioning of surface exploration sites. Conditions related to the restoration of sites are included in the surface exploration permit issued for each drilling campaign. Once the clean-up has been completed, the site is inspected by the province.

CNSC staff therefore recommends that the Commission accept CNSC staff's assessment that pursuant to the Nuclear Safety and Control Act and the regulations made under the Act, a licence is not required for the Shea Creek Project, accept CNSC staff's determination that the proposal does not require an environmental assessment under the Canadian Environmental Act and revoke Mine Facility Removal Licence 158-0.1

Thank you.

MR. HOWDEN: That concludes our presentation.

THE CHAIRPERSON: Thank you. Just for the record, I would like to note that that is based on CMD 02-H5.

With those presentations completed, I would like to open the floor for questions by the Commission members with regards to these presentations.

Dr. Barnes.

MEMBER BARNES: Just one to COGEMA.

I don't think you mentioned what was going to happen to any core material that might be stored on these sites, particularly any hot core. I may have missed it.

MR. POLLOCK: We mentioned it but it was very brief and easily missed.

All the core from Shea Creek is taken to the Cluff Lake Project. As Commission members will recall Cluff Lake is an operating mining facility already licensed by the Commission and there have -- there is core examination facilities building and core storage racks have existed at Cluff Lake for many years, going all the way back to the start of the Cluff Lake Project.

So there is no core at Shea Creek. In fact, at the end of the summer drilling season when we demobilized the drill rigs, one could probably argue we could get rid of our decommissioning assurance every year. It is sort of there on the assumption that partway through the drilling season we are going to disappear and leave the drill rigs sitting there. So it is an assurance for somebody to then go out and demobilize the facilities. There is no aspect associated with core storage at Shea Creek.

THE CHAIRPERSON: Mr. Graham.

MEMBER GRAHAM: Page 13 of your presentation to COGEMA, you talked about protection of workers in the environment. There is no place, I don't believe, unless I missed it, in your presentations you gave any indication of reportable accidents or you gave any average gamma doses and so on like was given by COGEMA on the Shea Creek Project. They went into some detail on dose to workers and so on. Could you give us that information or could you provide us that?

THE CHAIRPERSON: Just to clarify, Mr. Graham. I believe that you were referring to the previous application --

MEMBER GRAHAM: Previous application did it.

THE CHAIRPERSON: -- which was Dawn Lake.

MEMBER GRAHAM: I'm sorry. Dawn Lake I mean to same by Cameco.

MR. POLLOCK: I think I understood the question.

MEMBER GRAHAM: I'm sorry. I sometimes get COGEMA and -- get them mixed up. But I guess what I'm saying or really what I'm asking is, is reportable accidents and average gamma doses. We were given that in the formal presentation by the other presenter this morning.

MR. POLLOCK: There are quite strict reporting requirements in terms of conventional accidents under the Occupational Health and Safety Act. And clearly depending on the circumstances and the severity, one could visualize, if warranted, investigation being carried out by the provincial regulatory body on a specific -- in follow up to a specific incident. That is over and above what we would do internally.

With respect to potential

radiation or in respect to radiation exposures, the exploration staff wear TLDs. We have looked at these quite closely in the context of whether or not its necessary to classify exploration workers as nuclear energy workers, i.e., is the dose more than a millisievert per year and the short answer is no.

The doses are well under a millisievert with the qualifier that you have to be quite careful to correct out the background gamma radiation exposure quite carefully. Because over the course of a summer program, the control badges will pick up more than a millisievert just sitting in the control location. So you have to be fairly careful about how you do your background corrections so that you don't confuse the normal background with exposure from the exposure activity.

Providing you do that background correction, we are well under a millisievert. We also do routine measurements of radon daughter progeny inside the buildings or tents, whichever the case may be where cores are examined and when one looks at the radon progeny levels, they are very typical of the lower end of the range that

you see in residential housing.

So even when you add this potential radon exposure, it's very difficult to say what is background and what is not, but they are very typical of what, you know, there is no difference or may be even lower than what people will be exposed to when they go home in terms of radon.

So that is kind of a long rambling answer. But we are quite confident there is no need to classify these staff as nuclear energy workers.

MEMBER GRAHAM: Question. Were there any reportable accidents at this site?

MR. POLLOCK: None that either Jean-Claude or I can recall sitting here.

MEMBER GRAHAM: Second question then and the only other one that I will ask, we were given in the other -- on the Dawn Lake Project we were given the average annual gamma dose in 2000 for 20 individuals did not exceed 0.3 millisieverts. Have you that type of information also tracking and logging or not?

MR. POLLOCK: Yes, we track and log the information and I can't quote you what the

actual average was for the years when we have done exploration at Shea Creek. I can say that they were certainly well under one millisievert per year or per person.

MEMBER GRAHAM: And in the hot core logging shack or facility or whatever it's called, was the range results there less than 001 to 005 or were there anything that was above average?

MR. POLLOCK: I don't recall the precise numbers other than to make the statement that I felt comfortable with us providing to the Commission staff assurance that we did not have nuclear energy workers employed at the exploration project. So we weren't sort of flirting with the numbers so that I felt uncomfortable with where we were relative to one millisievert.

If the cores are particularly mineralized, we use measures, you know, if you see these sort of like these lead-lined aprons when you go to the dentist, you will see that the dental assistant will wear, we have the same things for the exploration staff and certainly their training and supervision is, you know, time, distance and shielding are the elements to

protecting against gamma radiation.

So one encourages them that if you are going to stand around and talk, don't stand right beside the core. Go outside the tent and talk. Plus, where appropriate, we actually use these lead-lined aprons that you see in the dental office.

MEMBER GRAHAM: Okay. Thank you.

THE CHAIRPERSON: Perhaps the staff would like to comment on Mr. Graham's question. Is there anything you would like to add or could add to that?

MR. McCABE: Rick McCabe. We are not aware of any accidents on the site. I could comment that the doses are low and in the same order of magnitude as the ones expressed by Cameco in their presentation. I could ask the project officer if you want more specific details?

MEMBER GRAHAM: No. All I was wondering was there anything alarming that was higher than the average or anything else because it wasn't there and when it wasn't there, you beg to question why it wasn't. So you are satisfied?

MR. McCABE: Yes, we are. Thanks.

MEMBER GRAHAM: Okay. Thank you.

THE CHAIRPERSON: Actually, if I may, Mr. Graham, I would -- because these records are treated separately in terms of the two applications, I think it would be helpful if we had for this record, if there is further information with regards to those doses in reply to your question that we have a specific statement rather than a comparative statement with the former licensee's application.

MR. McCABE: Perhaps, Madam Chair, we could provide the letter with the doses. I don't have the exact numbers in front of me right now.

THE CHAIRPERSON: Do you have the letter with you?

MR. McCABE: I don't but I could get it within a very short period of time.

THE CHAIRPERSON: I would just like to confer for a moment, please.

--- Short pause

THE CHAIRPERSON: Is the letter available?

MR. McCABE: Oh, yes. It's publicly available. We received the doses from the exploration workers on a regular basis and

they are reviewed by our staff as they are for any of the operating ones.

THE CHAIRPERSON: My question being if we took a break, could this information be available and read into the record within five, ten minutes?

MR. McCABE: Certainly. Within five or ten minutes, I'm not sure. I have to get it from Saskatoon. So I don't know what my chances are down below here getting it.

THE CHAIRPERSON: My view is that I will ask my colleagues if they are comfortable with an estimate of the doses based on the information from the staff and from the applicant or if they would like a break and specific numbers. Are you comfortable an estimate?

MEMBER GRAHAM: In the future it would be nice to have that in presentations when it is done at the outset.

MR. McCABE: The point has been noted.

THE CHAIRPERSON: Yes, thank you.

So could we please have an estimate. We have heard various back and forth in terms of response to questions but if we could

have a statement of an estimate of dosage level compared to the guidelines that were given in terms of perhaps nuclear workers.

MR. HOWDEN: I think CNSC staff can speak with a high level of confidence that the doses are no higher than those quoted by Cameco which I believe were 0.03 millisieverts.

THE CHAIRPERSON: Is the licensee in broad agreement with that estimate?

MR. POLLOCK: Yes. We would have difficulty in actually measuring anything less than 0.1, when you take into account that you have to correct for the background. So the majority of the people come up as a zero. Obviously it's not exactly zero. It's just that you can't measure the difference. It's that small.

THE CHAIRPERSON: Is the Commissioner member satisfied with that estimate?

Therefore if there is any large variation that would change that estimate above, for example, the level for nuclear workers, I think the Commission would require that you give us that estimate.

Mr. Graham.

MEMBER GRAHAM: Just for

clarification, you said "03." Did you mean 0.03 or 03 because there is quite a difference?

MR. HOWDEN: Point zero three.

THE CHAIRPERSON: Thank you for your forbearance with regards to that.

Dr. Giroux.

MEMBER GIROUX: Well, my main question has been answered but I would pursue this in terms of the methodology and I would first as COGEMA, can you tell me in broad terms how you factor out background radiation?

MR. POLLOCK: For gamma radiation it's quite straightforward. One has -- we receive the TLD measurement devices from the supplier. We use an external companies who supply the devices and you deploy control devices that are deployed at the camp, or in this case Cluff Lake, and you measure over the measurement period, typically either a month or a quarter what has been the dose that is received by the control TLD and then you compare that to the dose that is received by the worker.

And the worker will -- there is a rack for the badges. So when they are not at the work site, they will leave their badges in the

same rack as where the control TLDs are. So that over the 12 to 16 hours per day where they are not at work, their badges are sitting side by side in a low background location and then you simply subtract off what is -- when these TLDs are read, the reader basically -- it's an automated device that measures the intensity of the light that is from the energy when you discharge the device.

So you get a measurement of what has been the gamma exposure of the control device compared to what has been the gamma exposure of the device worn by each individual worker and you do a simply substraction. There is enough uncertainty that negative results are rounded to zero. You know, you can get very small plus or minus numbers that, from a practical point of view, you would probably have to see something approaching 0.1 as an actual difference.

For radon or -- for radon exposure it is very difficult to tell what is the natural background because it varies quite a lot from one location to the other. So we simply measure the radon progeny concentrations and work out what that corresponds to in terms of dose without any. So it includes whatever may be there as a

background dose.

These core examination facilities and tents are what you might call well ventilated. So typically the numbers are about, you know, the same as you would see if you just went out and measured in the outdoor environment.

MEMBER GIROUX: Madam Chair, I would be curious to explore whether Cameco has a similar procedure. I wonder if it is in order to put the question?

THE CHAIRPERSON: No.

Further questions?

02-H5.2

Written submission from Saskatchewan Environmental Society

THE CHAIRPERSON: We will then move to CMD 02-H5.2 which is a written submission from Saskatchewan Environmental Society. Are there any questions for the Commission members with regards to this written submission.

Thank you very much.

MR. LEBLANC: Merci. This completes the record for the public hearing on the matter of an application by COGEMA Resources Inc.

for the revocation of its Mining Facility Removal Licence for the Shea Creek Project.

The Commission will deliberate and will publish its decision in due course. It will be posted on the CNSC website as well as distributed to participants.

THE CHAIRPERSON: Item six on the agenda, the one day hearing on the matter of the application by COGEMA Resources Inc. for revocation of a Mining Facility Removal Licence for the Kiggavik-Sissons Project is rescheduled to April 18th 2002. A revised notice of public hearing 2002-H4 was published on February 5th. A deadline for filing by the intervenors is March 19th 2002 and the hearing will take place here in the CNSC public hearing room on April 18th with regards to that.

In terms of, that is the end of the portion, the morning portion of the hearings. We will have a break until 1:30 and we will move until into the new hearings at that time.

Thank you very much.

--- Upon recessing at 12:05 p.m.